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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,688	03/24/2004	Hisashi Takita	09792909-5826	4416

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EXAMINER

SELBY, GEVELL V

ART UNIT	PAPER NUMBER
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2622

MAIL DATE	DELIVERY MODE
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06/05/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/807,688	Applicant(s) TAKITA, HISASHI	
	Examiner Gevell Selby	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Clark et al., US 6,433,822.**

In regard to claim 1, Clark et al., US 6,433,822, discloses an imaging device (see figure 1, element 10) which generates pixel signals for pixels which form an image and supplies said pixel signals to a plurality of correction means (see figure 1, element 28) for correcting said pixel signals, the imaging device comprising:

a plurality of photoelectric conversion means (see figure 1, element 10) which are arranged vertically and horizontally and generate pixel signals by photoelectric conversion (see column 3, lines 58-67);

supply means (see column 1, element 26) which supplies pixel signals generated by said photoelectric conversion means to correction means different from the correction means to which pixel signals generated by adjacent

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photoelectric conversion means are supplied (see column 4, lines 1-3: each column has an output line that supplies pixel signals to a CDS circuit different from the CDS circuit of the adjacent column).

In regard to claim 2, Clark et al., US 6,433,822, discloses the imaging device according to claim 1, wherein said imaging device is a CMOS (Complementary Metal-Oxide Semiconductor) [see column 1, lines 24-26].

In regard to claim 3, Clark et al., US 6,433,822, discloses the imaging device according to claim 1, wherein said correction means is a CDS (Correlated Double Sampling) processing circuit (see figure 1, element 28), and said supply means supplies pixel signals generated by said photoelectric conversion means to a CDS processing circuit different from the CDS processing circuit to which pixel signals generated by the adjacent photoelectric conversion means are supplied (see column 4, lines 1-3: each column has an output line that supplies pixel signals to a CDS circuit different from the CDS circuit of the adjacent column).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al., US 6,690,421, in view of Clark et al., US 6,433,822,.**

In regard to claim 4, Yamada et al., US 6,690,421, discloses an imaging device comprising:

a plurality of pixels (see figure 1, elements 11a-15d) which are arranged in an imaging area and generate a signal of a level corresponding to the amount of received light (see column 4, lines 41-53); and

a plurality of signal lines (see figure 1, elements 16a-d and 17a-d) each of which is arranged for each column of said plurality of pixels (see column 4, lines 54-63),

wherein one pixel column of said plurality of pixels includes at least a first pixel (see figure 1, elements 11a) and a second pixel (see figure 1, elements 12a).

The Yamada reference does not disclose wherein:

a signal from said first pixel is read out to a signal processing circuit which is provided at an end of a first signal line included in said plurality of signal lines, through said first signal line, and

a signal from said second pixel is read out to a signal processing circuit which is provided at an end of a second signal line included in said plurality of signal lines, through said second signal line different from said first signal line.

Clark et al, US 6,433,822, discloses an imaging device with column signal processing circuits including a CDS circuit (see figure 1, element 28) and a column A/D converter (see figure 1, element 42) at the end of each column output line (see figure 1, element 26), wherein the pixel signals are readout out to the processing circuits through the signal lines (see column 4, lines 1-4).

It would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Yamada et al., US 6,690,421, in view of Clark et al, US 6,433,822, to have column signal processing circuits including a CDS circuit and a column A/D converter at the end of each column output line, wherein the pixel signals are readout out to the processing circuits through the signal lines, in order to simultaneously, process the pixel signals from each column, making the image processing faster. Therefore, the combination of Yamada and Clark discloses wherein a signal from said first pixel is read out to a signal processing circuit which is provided at an end of a first signal line included in said plurality of signal lines, through said first signal line, and a signal from said second pixel is read out to a signal processing circuit which is provided at an end of a second signal line included in said plurality of signal lines, through said second signal line different from said first signal line.

In regard to claim 5, Yamada et al., US 6,690,421, in view of Clark et al, US 6,433,822, discloses the imaging device according to claim 4. The Clark reference discloses wherein said signal processing circuit includes an AD conversion circuit (see figure 1, element 42).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 7,113,215, discloses a CMOS image sensor with column signal processing circuits.

US 6,452,149, discloses an image sensors with a signal processing section that processing each column simultaneously.

US 4,500,915, discloses an imager that alternates pixel readout to opposing registers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gevell Selby whose telephone number is 571-272-7369. The examiner can normally be reached on 8:00 A.M. - 5:30 PM (every other Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on 571-272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

gvs



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